

**LOCATION MAP**  
SCALE 1"=600'

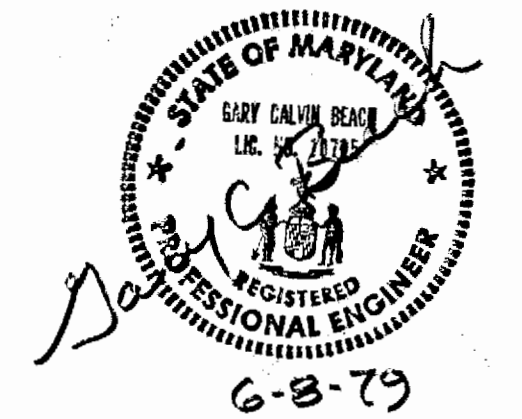
**CONTRACT NO. 2870-D-W&S**  
**GREENBRIAR WOODS**  
**VILLAGE OF KINGS CONTRIVANCE**  
**HOWARD COUNTY, MARYLAND**  
**DEPARTMENT OF PUBLIC WORKS**

**GENERAL NOTES**

1. Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
2. All horizontal controls are based on Maryland State Coordinates.
3. All vertical controls are based on U.S.G.S. Datum.
4. All pipe elevations shown are invert elevations.
5. Clear all utilities by a minimum of 6'. Clear all poles 2'-0" minimum or tunnel as required.
6. For all standard details see standards bound in specifications.
7. Contractor shall locate existing utilities in advance of construction operations in the vicinity of proposed utilities.
8. Contractor shall notify the following utilities or agencies at least five (5) days before starting work shown on these plans:  
State Highway Administration - 531-5533  
Baltimore Gas and Electric Company - Underground Electric Distribution Engineering - "Damage Control" - 234-5691  
Baltimore Gas and Electric Company - Underground Gas Distribution Engineering - 559-0100  
Chesapeake and Potomac Telephone Company - 725-9976  
American Telephone and Telegraph - Cable Location Division - 301-393-3553  
Colonial Pipeline Company - 781-4641
9. Trees are to be protected from damage to maximum extent. Trees located within the construction strip are not to be removed or damaged by the contractor.
10. Contractor shall remove trees, stumps and roots along line of excavation as directed by the Engineer. Payment for such removal shall be included in the unit price bid for excavation and backfill for water and sewer mains.
11. Place regulation "Men Working" and warning signs as required to comply with Maryland State Highway Administration Manual of Traffic Control for Highway Construction and Maintenance Operations.
12. All water mains to be C.I.P., D.I.P., or A.C.P. unless otherwise noted.
13. Top of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
14. All valves shall be strapped to trees in accordance with standard details.
15. Block all fittings with concrete, see standards bound in specifications.
16. Bury line elevations on fire hydrants shall be set to the elevations shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with standard details. Soil around the fire hydrant to be compacted in accordance with Section 5-15 of the Standard Specifications.
17. All water house connections shall be meter setting for inside.
18. All sewer mains shall be C.S.P.X., V.C.P.X., or A.C.P. Class 2400 unless otherwise noted.
19. The contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
20. All manholes shall be 4'-0" inside diameter, unless otherwise noted.
21. Water and Sewer Facility Locations are referenced to Road Centerline Stations in Plan.

QUANTITIES			
ITEM	BID	AS-BUILT	MATERIAL/SUPPLIER
8" Sewer	5680 L.F.	5,540 L.F.	J.M. Transite cl 2400
Manholes	33 No.	33	
6" Water	3100 L.F.	3,100 L.F.	Linkborg D.I.P.
8" Water	2495 L.F.	2,493 L.F.	" " "
12" Water	475 L.F.	467 L.F.	" " "
Fire Hydrants	11 No.	11	M.F.H.
8" Valve	6 No.	6	
6" Valve (Excluding F.H. Valves)	7 No.	7	
12" Valve	1 No.	1	

Zone from Rte. 32  
Elevation Gradient = 550'  
Test Gradient = 700'



Greenbriar Woods  
Section 5 Area 1  
Contract No. 2870-D-W&S

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
James L. G. [Signature] 8-24-79  
CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE

GREENHORNE & O'MARA, INC.  
ENGINEERS - ARCHITECTS - PLANNERS - SURVEYORS  
6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

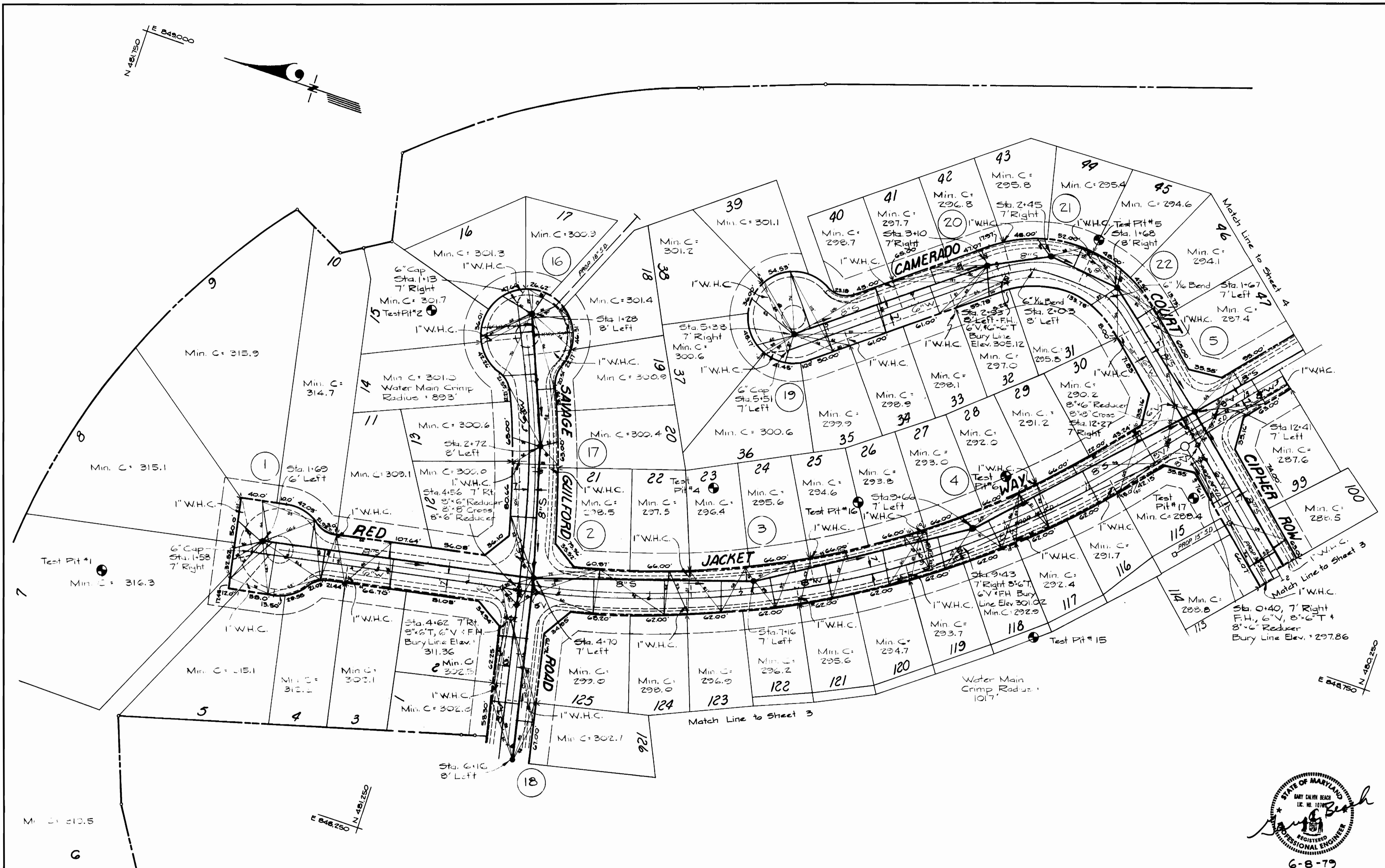
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
[Signature] 8-24-79  
DIRECTOR OF PUBLIC WORKS DATE

CONTRACT NO. 2870-D-W&S

LOCATION MAP OF  
WATER & SEWER MAINS

GREENBRIAR WOODS  
VILLAGE OF KINGS CONTRIVANCE  
6TH ELECTION DISTRICT

DRAWING NO. 1 OF 7	SCALE 1"=600'
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STATE OF MARYLAND  
 BARRY CALVERT BEARD  
 LIC. NO. 1077  
*Barry Beard*  
 REGISTERED PROFESSIONAL ENGINEER  
 6-8-79

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*James L. Olin* 8-24-79  
 CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE

GREENHORNE & O'MARA, INC.  
 ENGINEERS ARCHITECTS PLANNERS SURVEYORS  
 6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*John F. ...* 8-24-79  
 DIRECTOR OF PUBLIC WORKS - DATE

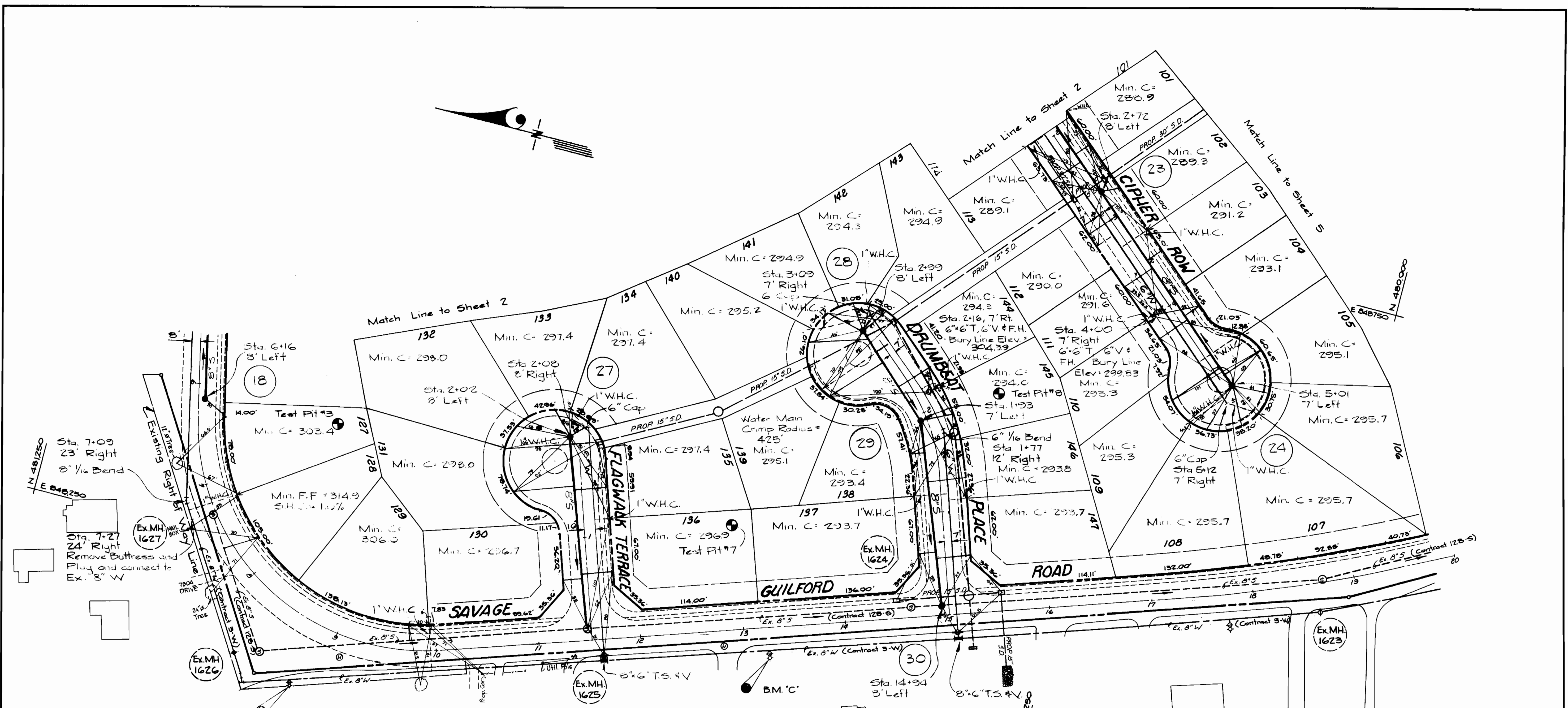
CONTRACT NO. 2870-D-W&S

PLAN FOR  
 WATER & SEWER MAINS

GREENBRIAR WOODS  
 VILLAGE OF KINGS CONTRIVANCE  
 6TH ELECTION DISTRICT

DRAWING NO. 2 OF 7	SCALE 1" = 50'
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AS BUILT 3/25/80 MW



**BENCH MARKS**

B.M. 2042004  
 N 478,896.643 E 848,959.958 EL. 288.85  
 Station 2042004 is a concrete monument set 0.1 feet below the surface in the northeast corner of the intersection of Vollmerhausen Road with Savage Guilford Road.

B.M. 2042005  
 N 478,964.826 E 850,422.459 EL. 286.71  
 Station 2042005 is an iron re-bar set 0.3 feet below the surface on the south side of Vollmerhausen Road, just east of a concrete bridge approximately 0.25 miles east of the intersection of Vollmerhausen Road and Savage Guilford Road.

B.M. 'C' EL. 303.53  
 Station 'C' is the bonnet bolt on the fire hydrant on the west side of Savage Guilford Road at Station 13+25, 26' Rt.

B.M. 'D' EL. 322.27  
 Station 'D' is the bonnet bolt on the fire hydrant on the west side of Savage Guilford Road at Station 8+75, 60' Rt.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 James X. Greenhorn  
 CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE



Greenbriar Woods  
 Section 5 Area 1  
 Contract No. 2870-D-W#5

GREENHORNE & O'MARA, INC.  
 ENGINEERS ARCHITECTS PLANNERS SURVEYORS  
 6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 F. N. Nimmey  
 DIRECTOR OF PUBLIC WORKS - DATE

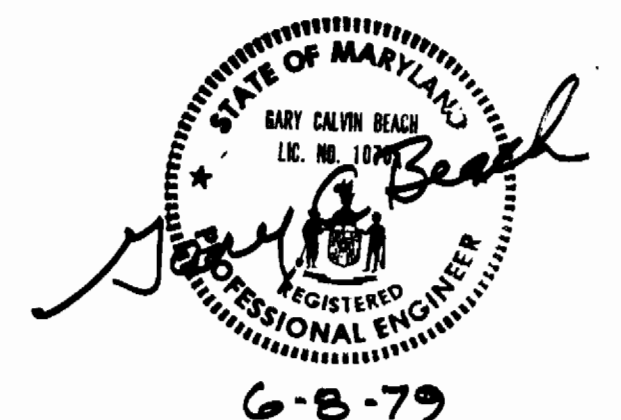
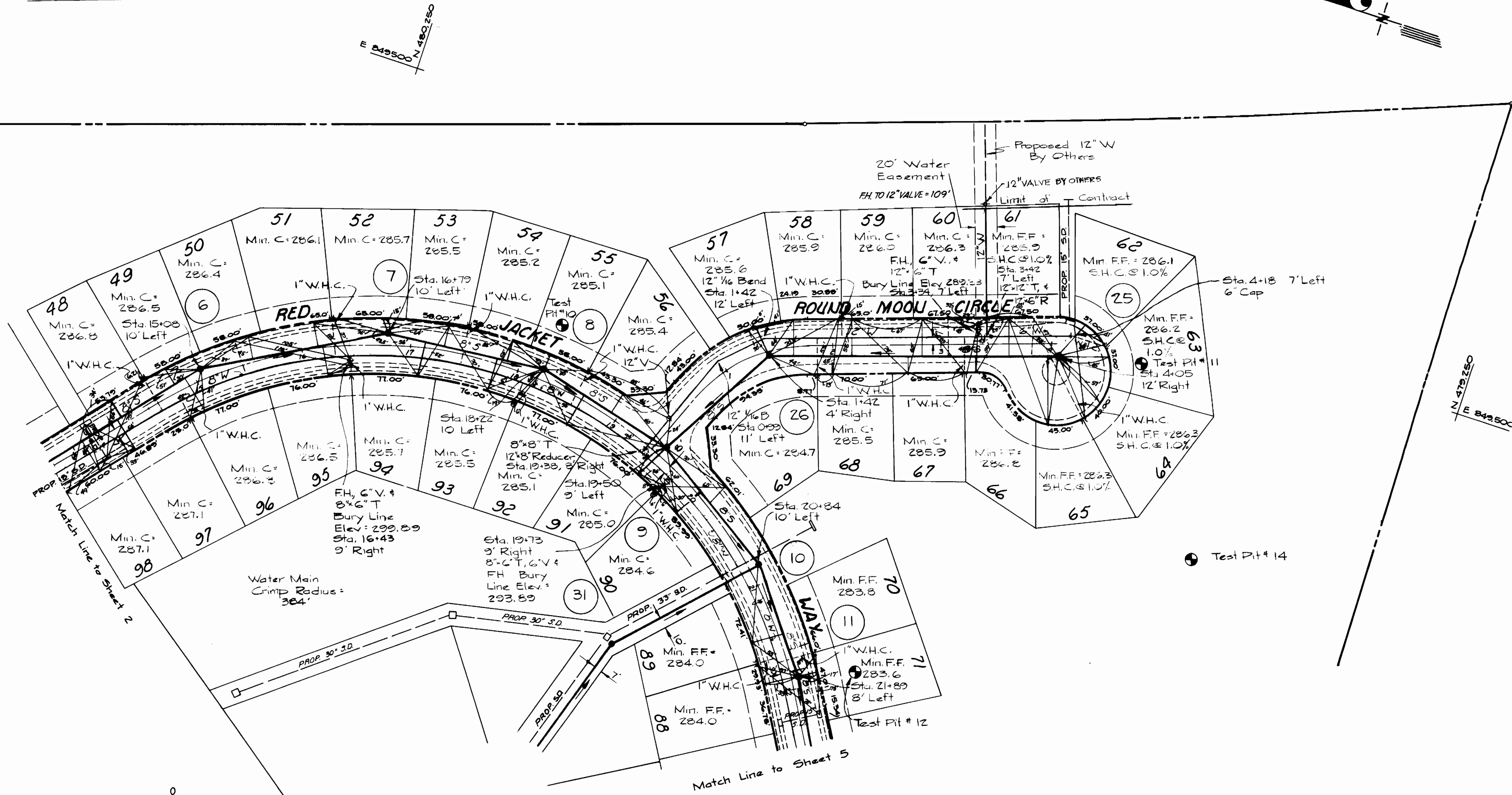
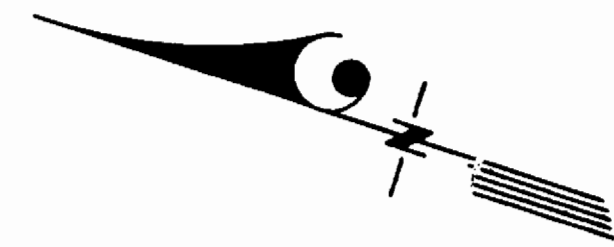
CONTRACT NO. 2870-D-W#5

PLAN FOR  
 WATER & SEWER MAINS

GREENBRIAR WOODS  
 VILLAGE OF KINGS CONTRIVANCE  
 6TH ELECTION DISTRICT

DRAWING NO. 3 OF 7	SCALE 1"=50'
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AS BUILT 3/26/80 June 8, 1979



Greenbriar Woods  
Section 5 Area 1  
Contract No. 2870-D-W15

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*James L. ...* 8-27-79  
CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE

GREENHORNE & O'MARA, INC.  
ENGINEERS ARCHITECTS PLANNERS SURVEYORS  
6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

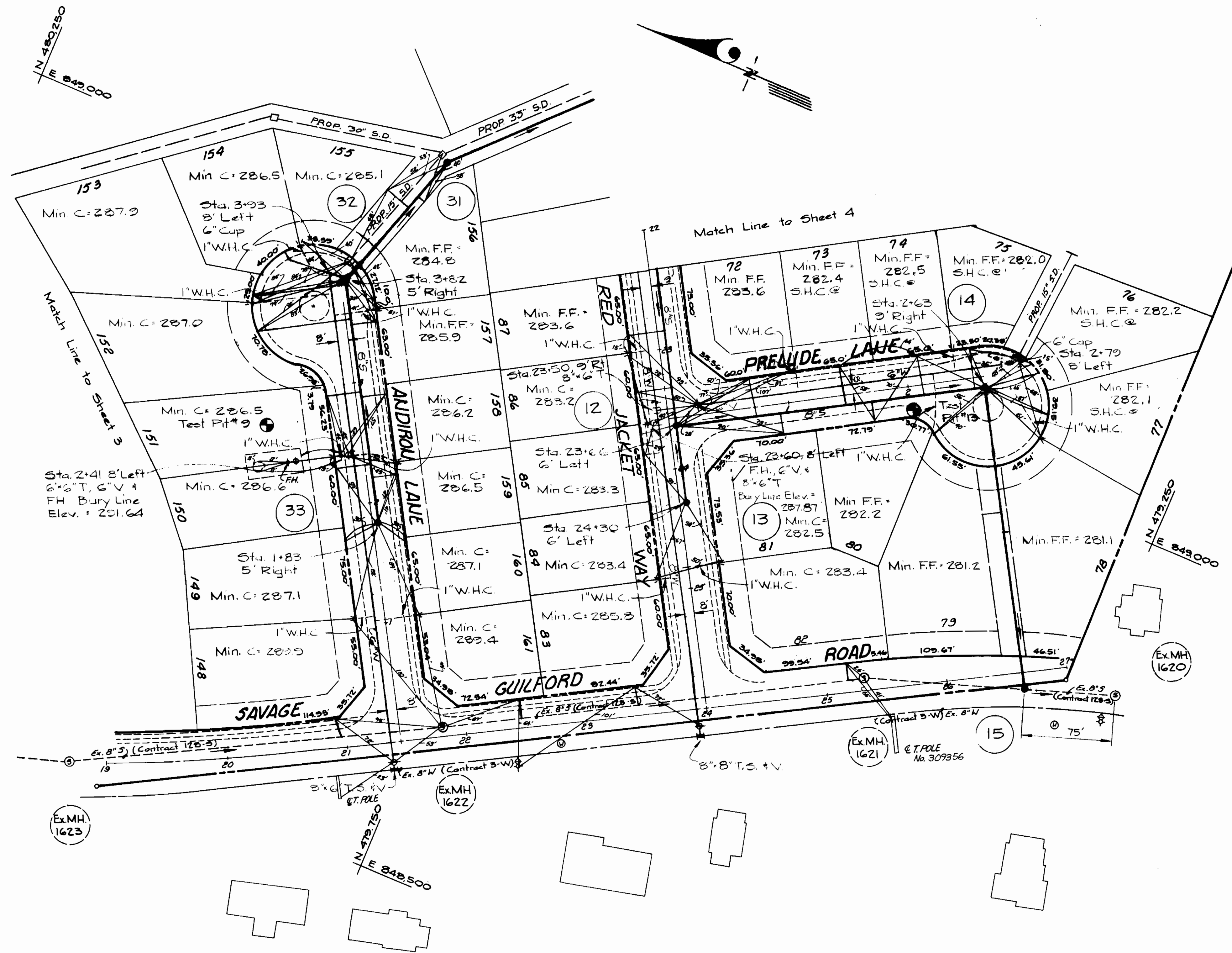
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*...* 8-27-79  
DIRECTOR OF PUBLIC WORKS - DATE

CONTRACT NO. 2870-D-W15

PLAN FOR  
WATER & SEWER MAINS

GREENBRIAR WOODS  
VILLAGE OF KINGS CONTRIVANCE  
6TH ELECTION DISTRICT

DRAWING NO. 4 OF 7	SCALE 1" = 50'
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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*James L. Glavin* 8-21-79  
 CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE

GREENHORNE & O'MARA, INC.  
 ENGINEERS ARCHITECTS PLANNERS SURVEYORS  
 6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

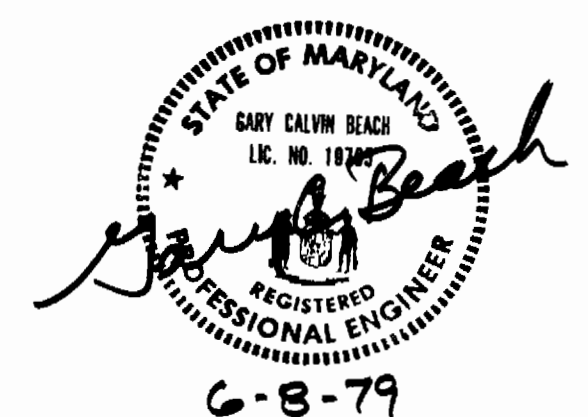
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Frank F. Nemi* 8-24-79  
 DIRECTOR OF PUBLIC WORKS DATE

CONTRACT NO. 870-D-W&S

PLAN FOR  
 WATER & SEWER MAINS

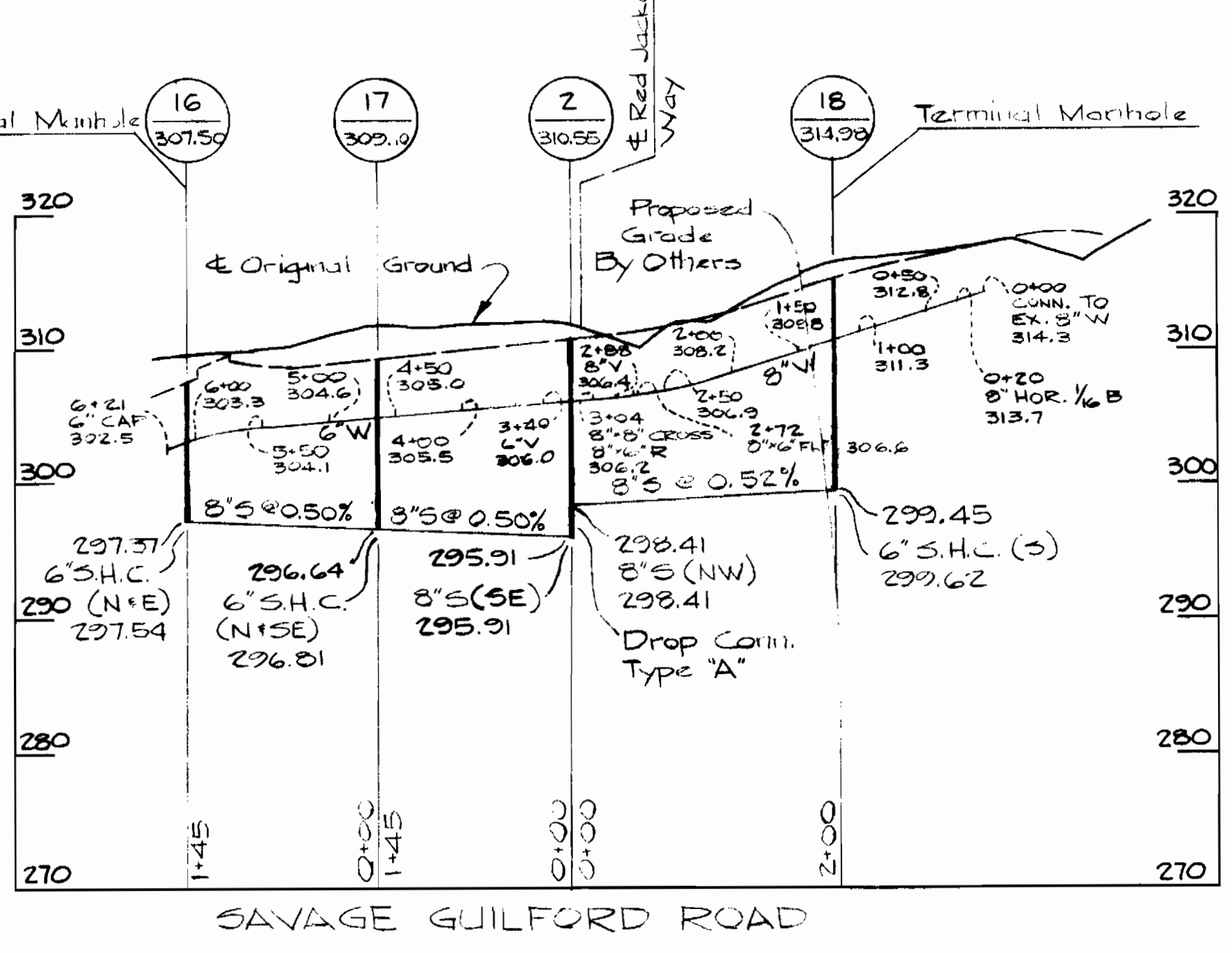
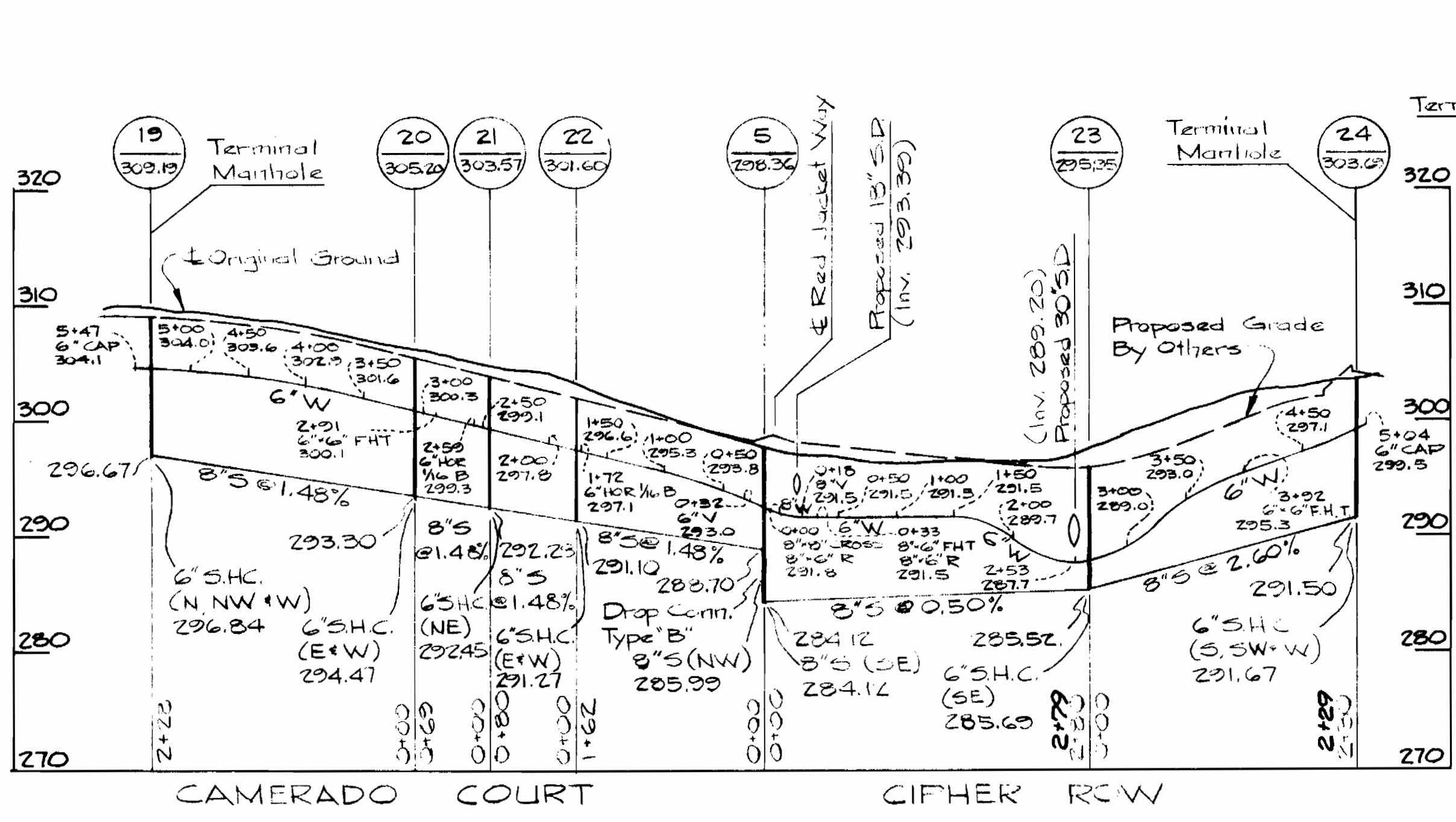
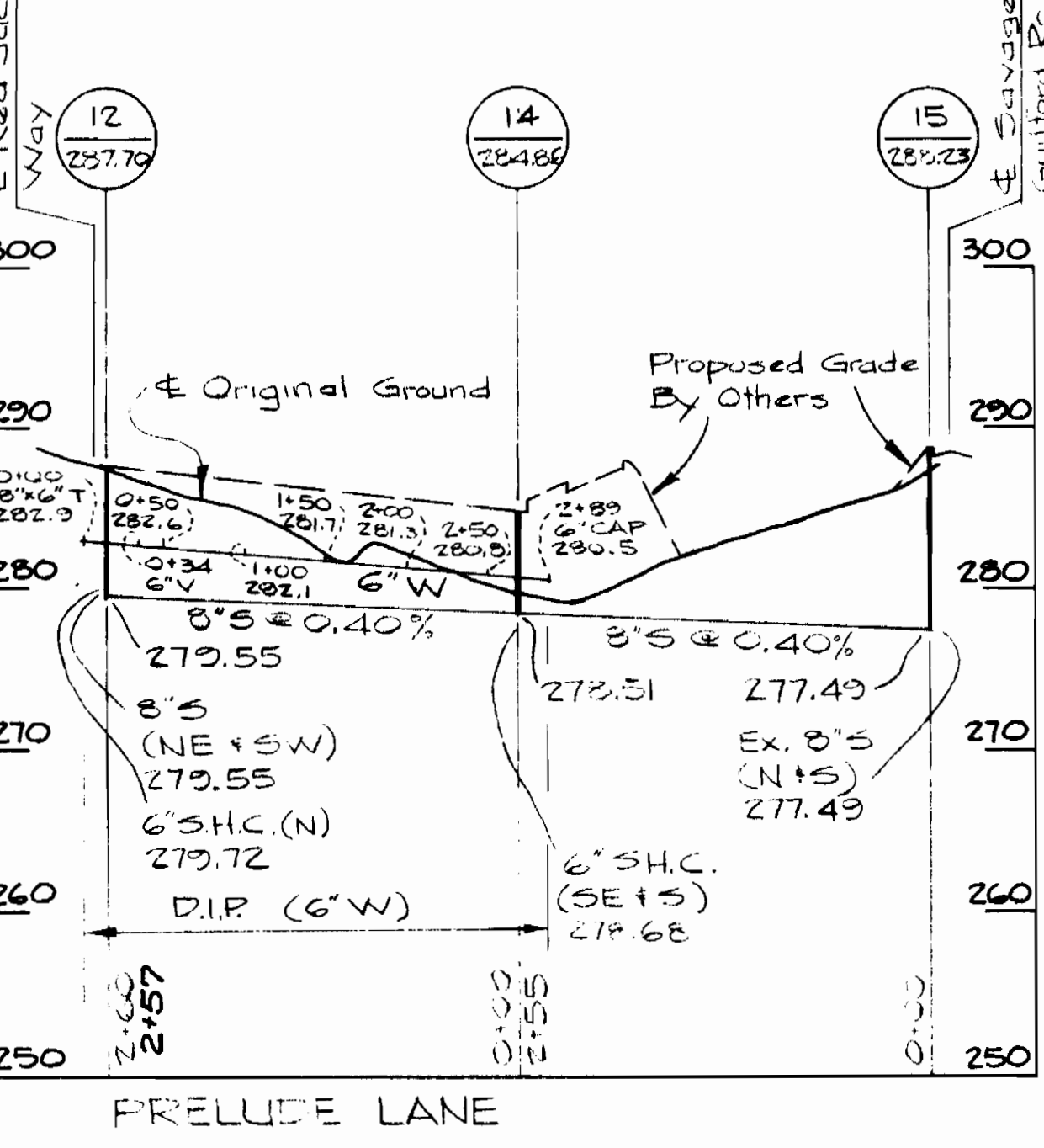
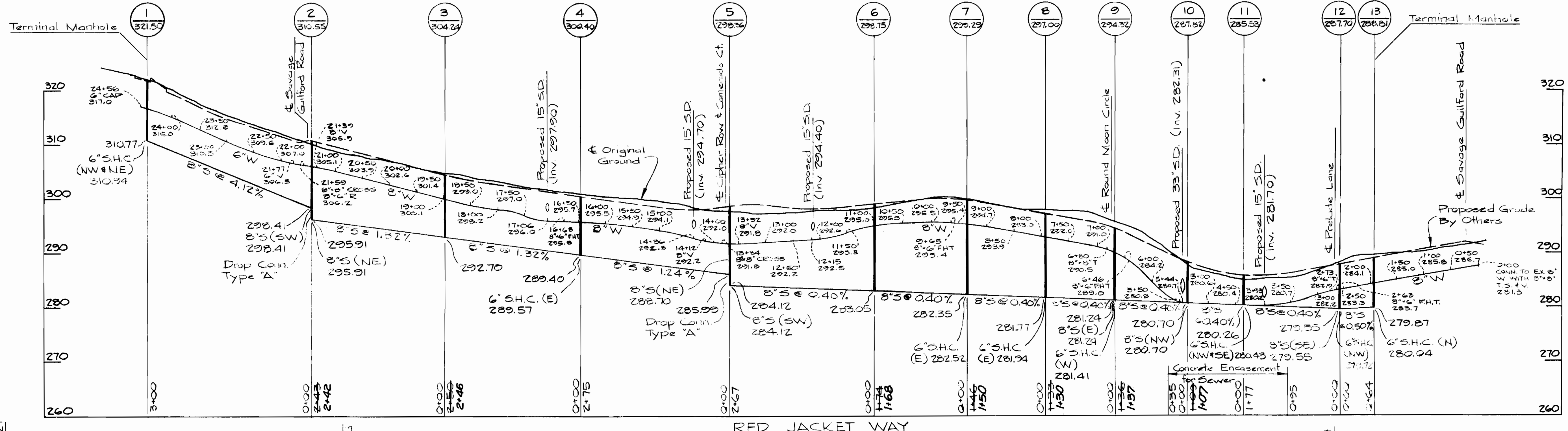
GREENBRIAR WOODS  
 VILLAGE OF KINGS CONTRIVANCE  
 6TH ELECTION DISTRICT

DRAWING NO. 5 OF 7	SCALE 1" = 50'
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Greenbriar Woods  
 Section 5 Area 1  
 Contract No. 2870-D-W&S

June 8, 1979



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 James L. Glavin, Chief-Bureau of Utilities, DATE 8-24-79  
 CHIEF-BUREAU OF UTILITIES DATE CHIEF-BUREAU OF ENGINEERING DATE

GREENHORNE & O'MARA, INC.  
 ENGINEERS ARCHITECTS PLANNERS SURVEYORS  
 6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 CONTRACT NO. 2870-D-W&S  
 DATE 8-24-79

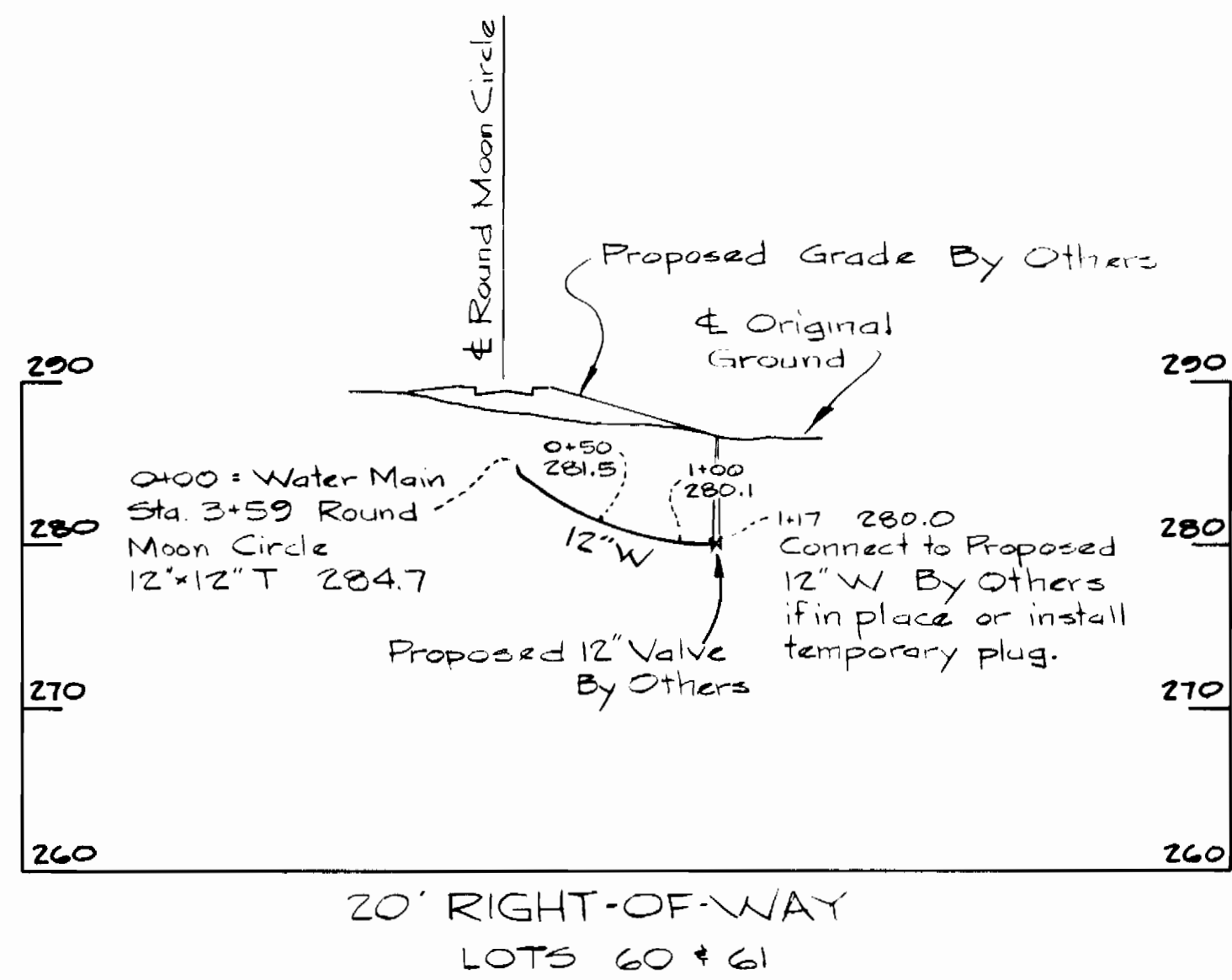
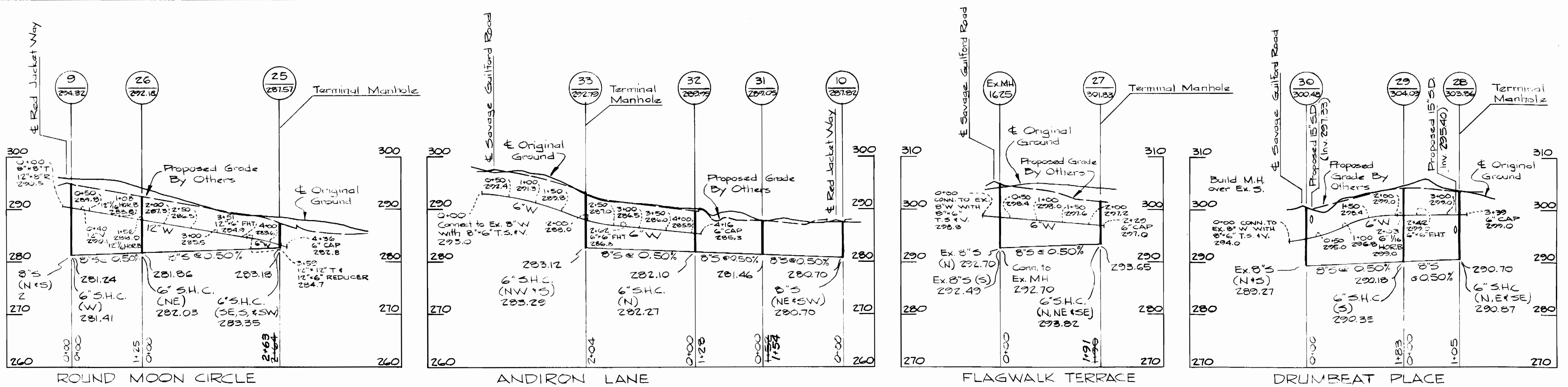
PROFILE FOR  
 WATER & SEWER MAINS

GREENBRIAR WOODS  
 VILLAGE OF KINGS CONTRIVANCE  
 6TH ELECTION DISTRICT

DRAWING NO. 6 OF 7 SCALE H:V = 1" = 100' V:1" = 10'

June 8, 1979

AS-BUILT 3-24-80



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 James A. [Signature] Chief-Bureau of Utilities DATE 8-27-79  
 W. O. [Signature] Chief-Bureau of Engineering DATE

GREENHORNE & O'MARA, INC.  
 ENGINEERS - ARCHITECTS - PLANNERS - SURVEYORS  
 6715 KENILWORTH AVENUE RIVERDALE, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 [Signature] Director of Public Works DATE 8-24-79

CONTRACT NO. 2870-D-W.B.S.

PROFILE FOR WATER & SEWER MAINS

GREENBRIAR WOODS VILLAGE OF KINGS CONTRIVANCE 6TH ELECTION DISTRICT

DRAWING NO. 7 OF 7 SCALE H:1"=100' V:1"=10'